



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,293	01/23/2004	Christoph Nagler	003-109	4669
36844	7590	09/20/2005	EXAMINER	
CERMAK & KENEALY LLP 515 E. BRADDOCK RD ALEXANDRIA, VA 22314			WIEHE, NATHANIEL EDWARD	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/762,293		NAGLER ET AL.	
	Examiner		Art Unit	
	Nathan Wiehe		3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
2. However, an application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet.
3. Appropriate correction is required.

Specification

4. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

5. The abstract of the disclosure is objected to because it contains two paragraphs and references a figure. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The metes and bounds of claim 3 are unclear. It appears that the applicant is claiming that the cross-section of both the cooling passage and the orifice are constant and equal. This limitation contradicts claim 2 from which this claim depends.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 12-14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Bartos (4,199,151). Bartos shows a first component, a heat shield, including hanger support (13) and shroud segments (18), a second component, including nozzle support (12), seal (11) and guide blade root (14), and a first cavity (21) communicatingly connected to the second cavity (defined by the first component) by a plurality of circumferentially spaced cooling-gas passages (22) through a wall (part of 13), in the

Art Unit: 3745

first component, which separates the first and second cavities. Bartos' second component (12) bears against the wall of the first component through seal (11) and separates the first cavity from the third cavity (HOT AIR). The orifice region, facing the first cavity, of the cooling passages (22) are positioned so that the orifice region is open with at least a predetermined minimum cross section when the second component is within its inherent range of displacement. The positioning of cooling passages (22) also inherently does not open toward the third cavity (HOT AIR) in any position of the second component (11) within its inherent range of displacement.

11. In regard to claim 12, the seal (11) itself can be viewed as the second component and the nozzle support (12) as the third component, which forms a gap between the first and third component connecting the first (21) and the third cavities (HOT AIR) which is sealed by the second component, seal (11).

12. In regard to claim 16, a turbomachine includes a gas turbine of a power plant. Therefore, the invention of Bartos is inherently capable of being used in a gas turbine of a power plant.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2, 4, 7-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartos in view of Rizk (3,300,178). Bartos shows the invention

Art Unit: 3745

substantially as claimed except for the use of a groove associated with the cooling passageways. Rizk teaches the use of a circumferentially extending groove (70) connecting multiple cooling passageways (holes associated with cooling channels (63)) for shroud cooling in a turbine. Rizk's groove (70), and thus the orifice region, has a constant cross-section that is greater than that of the cooling passageways and includes an abrupt cross-sectional widening (the groove base surface not including passageway holes). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cooling arrangement of Bartos by including a circumferentially extending groove connecting a plurality of cooling passageways, as taught by Rizk, located along the bearing side of the wall piece of support hanger (13) in order to circumferentially distribute cooling air.

15. In regard to claim 4, the above modified invention would met the limitation, "wherein the minimum cross section is the same as or larger than the nominal cross section." due to the positioning of the cooling passageways in Bartos, wherein any position of the second component, within the range of displacement, would not significantly cover the passageways.

16. In regard to claim 11, in the above modified device the seal (11) itself can be viewed as the second component and thus the nozzle support (12), including guide blade root (14), bears against seal (11) and forms a gap between the first and third component connecting the first cavity (21) and the third cavities (HOT AIR) that is sealed by the second component, seal (11).

Art Unit: 3745

17. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartos in view of Proctor (5,165,847). Bartos shows the invention substantially as claimed except for the use of a bevel orifice region. Proctor teaches the use of a widening cross-sectional bevel (86) in the orifice region of a cooling passageway for use in shroud cooling of a turbomachine. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cooling passageways of Bartos by including a beveled orifice region as taught by Proctor in order to "provide regulated and substantially uniform cooling airflow" (Proctor column 4, lines 56-57).

Prior Art

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent issued to Bock discloses a turbine cooling passageways at least partially blocked by a ring element that is displaced radially by a thermal mechanism. The patent issued to Gonyou shows turbine cooling passages with an increasing cross-section. The patent issued to Kries discloses turbine heat shield cooling included a groove connecting a plurality of cooling passageways. The patent issued to Bart discloses the state of the art.

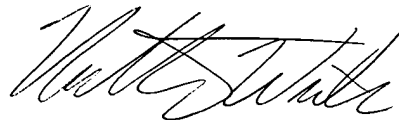
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Wiehe whose telephone number is (571)272-8648. The examiner can normally be reached on M-F.

Art Unit: 3745

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nathan Wiehe
Examiner
Art Unit 3745



EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

9/17/05